

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PDGW/P00509WO	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International application No. PCT/GB2004/003373	International filing date (day/month/year) 06.08.2004	Priority date (day/month/year) 21.08.2003	
International Patent Classification (IPC) or national classification and IPC A61C7/10			
Applicant BARNET & CHASE FARM HOSPITALS NHS TRUST et al.			

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
  - a.  (sent to the applicant and to the International Bureau) a total of 1 sheets, as follows:
    - sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
    - sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
  - b.  (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)), containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

Date of submission of the demand 15.06.2005	Date of completion of this report 20.01.2006
Name and mailing address of the International Preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Salvatore, C Telephone No. +49 89 2399-7194



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INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITYInternational application No.  
PCT/GB2004/003373

IAP20 Rec'd PCT/PTO 21 FEB 2006

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:

international search (under Rules 12.3 and 23.1(b))  
 publication of the international application (under Rule 12.4)  
 international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements\* of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):

## Description, Pages

1-10 as originally filed

## Claims, Numbers

1-6 received on 17.06.2005 with letter of 15.06.2005

## Drawings, Sheets

1/2, 2/2 as originally filed

 a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3.  The amendments have resulted in the cancellation of:

the description, pages  
 the claims, Nos.  
 the drawings, sheets/figs  
 the sequence listing (specify):  
 any table(s) related to sequence listing (specify):

4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

the description, pages  
 the claims, Nos.  
 the drawings, sheets/figs  
 the sequence listing (specify):  
 any table(s) related to sequence listing (specify):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**International application No.  
PCT/GB2004/003373**Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:
  - the entire international application,
  - claims Nos. 6  
because:
    - the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):
    - the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 6 are so unclear that no meaningful opinion could be formed (specify):  
**see separate sheet**
      - the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
      - no international search report has been established for the said claims Nos.
      - the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
        - the written form  has not been furnished  
 does not comply with the standard
        - the computer readable form  has not been furnished  
 does not comply with the standard
      - the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.
      - See separate sheet for further details

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**International application No.  
PCT/GB2004/003373**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Yes: Claims	1-5
	No: Claims	
Inventive step (IS)	Yes: Claims	1-5
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-5
	No: Claims	

**2. Citations and explanations (Rule 70.7):****see separate sheet**

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**INTERNATIONAL PRELIMINARY  
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(SEPARATE SHEET)**

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**Re Item III**

Claim 6 is both unclear and a violation of Rule 6.2a PCT and as such an opinion cannot be formulated for it.

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

Reference is made to the following documents:

- D1: US 2003/091952 A1 (CARANO ALDO ET AL) 15 May 2003 (2003-05-15)
- D2: US-A-5 829 970 (YOUSEFIAN JOSEPH Z) 3 November 1998 (1998-11-03)
- D3: US-B1-6 435 870 (WALDE KEVIN C) 20 August 2002 (2002-08-20)
- D4: WO 01/39687 A (KELES AHMET OEZLEM) 7 June 2001 (2001-06-07)

The document D1 is regarded as being the closest prior art to the subject-matter of claim 1 and shows an orthodontic brace having a support plate which, when in use, fits against the keratinised palate of the patient away from the incisive papilla, and has side pieces extending from opposite sides of the support plate adapted to grip the molars to be corrected and forcing them in appropriate directions using spring means. From the disclosure of D1 it is also seen that the presence of an osseointegrated implant or of tooth-borne components which discharge forces to neighbouring teeth and/or used for stability of the device are also necessary. The subject-matter of claim 1 differs from D1 in that the brace is specifically designed without tooth-borne components so that the forces are entirely transmitted to the support plate and the palate and not to other teeth.

The subject-matter of claim 1 is therefore new (Article 33(2) PCT).

The problem to be solved by the present invention may be regarded as that of reduced need for patient cooperation as well as eliminating reaction forces on other teeth which would otherwise influence the dental situation.

The solution to this problem proposed in claim 1 of the present application is neither mentioned, nor hinted at, in the prior arts and is thus considered as involving an inventive step (Article 33(3) PCT)

**INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(SEPARATE SHEET)**

International application No.  
**PCT/GB2004/003373**

Claims 2-5 are dependent on claim 1 and as such also meets the requirements of the PCT with respect to novelty and inventive step.

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## CLAIMS

1. A corrective orthodontic brace comprising:

a support plate, so shaped as to fit closely, in use, against the keratinised tissue of a user's palate, whilst seating adjacent but free of the incisive papilla;

side pieces extending from opposite side regions of said support plate to lie, in use, adjacent respective upper molars on opposite sides of the mouth and adapted to grip the or each such molar to be corrected, via a connection which will allow the molar to move relative to the support plate;

spring means, acting to bias the or each molar gripped by a side piece away from the front of a user's mouth by transmitting the resultant force to said support plate, with no tooth-borne component;

2. The orthodontic brace of claim 1 wherein the spring means is incorporated into the side pieces.

3. The orthodontic brace of claim 2 wherein the spring means are adjustable.

4. The orthodontic brace of any preceding claim further comprising attachment means, located on the support plate for attachment of restraining means to temporarily restrain the action of the spring means to facilitate fitting of the brace.

5. The orthodontic brace of any preceding claim wherein the support plate is contoured to the vertical and horizontal parts of the palate and the rugae.

6. An orthodontic brace substantially as described herein with reference to and as illustrated by any appropriate combination of the accompanying drawings.

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AMENDED SHEET

02/06/2005